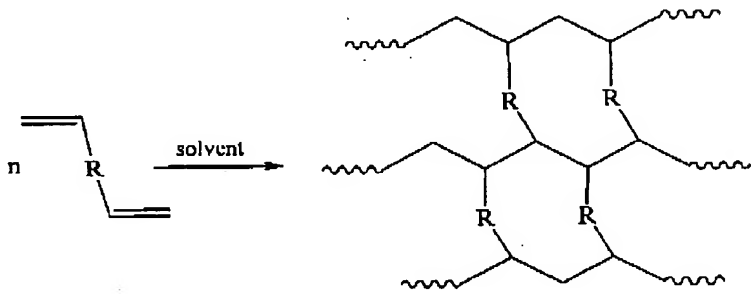
REMARKS

Claims 52-77 are in this application. Claims 1-51 have been cancelled.

According to the Examiner, claims 52-75 correlate to previous Group XIX, claim 76 correlates to previous Group XX and claim 77 correlates to previous Group XIX. The Examiner states that one of these three groups of inventions is to be elected. Therefore, claims 52-75 are provisionally elected. All rights to file one or more divisional applications is preserved.

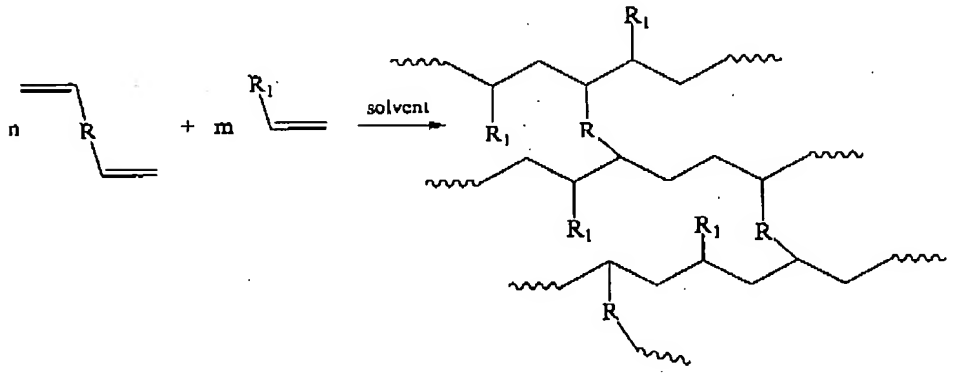
The Applicants disagree with the Examiner's requirement for a species election and consider any of composition components as interchangeable within the limits of their group (A, B, C, D, E); individually or in combination with other group representatives, the component may be used for manufacturing hydrogel biochips. As is known from documents published, the most widespread method for manufacturing cellular polymers, having a restricted swelling capacity in solvents, is reduced to homopolymerization reaction of monomers comprising two or more multiple bonds or copolymerization of monomers of different types, and at the least one of them comprises two or more multiple bonds A.A. Tager, Physical chemistry of polymers, Moscow, "Chemistry", 1968, pp. 43-44. (in Russian) [1].

Homopolymerization:



Scheme 1

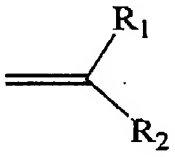
Copolymerization:



Scheme 2

However, in the invention claimed, for building-up a gel, the Applicants use the copolymerization method wherein the composition (K) components A, B, and C play a part of monomers comprising two or more multiple bonds:

- Group A components may be represented by a general formula:



wherein: R_1=H, R_2=C(O)NH_2 for acrylamide;

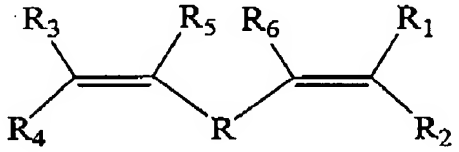
R_1=CH_3, R_2=C(O)NH_2 for methacrylamide;

R_1=H, R_2=C(O)NHC($CH_2OH)_3$ for *N*-[tris(hydroxymethyl)methyl]acrylamide;

R_1=CH_3, R_2=C(O)OCH_2CH_2OH for 2-hydroxyethylmethacrylate;

(and this is supported on page 4 of the specification)

- Group B components may be represented by a general formula:



wherein: R_1= R_2= R_3= R_4= R_5= R_6=H,

R= C(O)NHCH$_2$NHC(O) for *N,N'*-methylenbisacrylamide;

R_1= R_2= R_3= R_4=H, R_5= R_6=CH$_3$;

R= C(O)NHCH$_2$CH$_2$NHC(O) for *N,N'*-ethylenbismethacrylamide;

R_1= R_2= R_3= R_4= R_5= R_6=H;

R= C(O)NHCH(OH)CH(OH)NHC(O) for *N,N'*-(1,2-dihydroxyethylene)bisacrylamide;

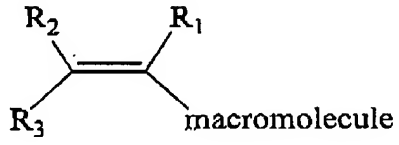
R_1= R_2= R_3= R_4= R_5= R_6=H,

R= C(O)[OCH$_2$CH$_2$O]$_{n-1}$CH$_2$CH$_2$OC(O) for polyethylene glycol diacrylate;

(and this is supported by the disclosure on page 4 of the specification);

- Group C components may be represented by a general formula:

wherein: R^1, R^2, R^3 are H, alk



The formulas mentioned shows that all compounds of A, B, and C groups comprises an unsaturated moiety that is capable to interact by the copolymerization reaction, on building-up a gel according to **Scheme 2**. Each one representative of any group A, B, or C may be substituted with another one, without adverse effect for the copolymerization reaction. By variation of the qualitative and quantitative compound of composition K, there would be obtained gels having various mechanical and physical properties (flexibility, porosity, and so forth) required for solving the specific problems using biochips.

Taken individually or in combination, components D and E are used as solvent wherein copolymerization reaction proceeds.

To perform a search, the Examiner may choose any composition (K) from the Table 1, as set forth on page 26 of the specification.

If there are any outstanding issues, please contact the undersigned.

Respectfully submitted,

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